RECORDS OF THE PAST

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GLACIAL MAN

BY PROF. GEORGE FREDERICK WRIGHT, D. D., LL. D., F. G. S. A.

AMONG the most sensational discoveries of the XIX Century were those relating to the capacity of ice for motion, and to the vast accumulations of glacial ice over certain portions of the earth's surface at a comparatively recent period. Principally through the labors of Charpentier, Louis Agassiz, and Guyot, between 1840 and 1850, it was discovered that the glaciers of the Alps moved down in their course at the rate of 3 or 4 feet a day in summertime, very much as any semifluid would do, and that in this movement the glaciers were carrying, to a lower level, rocks and any other earthy *débris* which might happen to be upon their surface or frozen into the mass. These same distinguished observers, also, ascertained that at some former period the alpine glaciers were immensely larger than at the present time, and had extended down the Swiss valley so as to fill it to the brim, pushing boulders from Mont Blanc up upon the Jura Mountains to the north to a height of 1,500 feet, and flowing around to the right and to the left as far east as Zurich, and to the west beyond Geneva, transporting boulders to a distance of fully 200 miles from the native ledges. In smaller dimensions glaciers descended the southern flanks of the Alps, and deployed far out in the valley of the Po. The glaciers still existing in the Alps are but the mere stumps of those which formerly covered and desolated all Switzerland and northern Italy.

Further investigations, continued with increasing interest up to the present day, have demonstrated that the Scandinavian glaciers formerly extended so as to fill the whole German Ocean, as they do now the Antarctic Ocean, and, joining with others, formed upon the mountains of Scotland, enveloped nearly the whole of Great Britain in their frozen grasp, and buried Holland, northern Germany, the whole of Sweden, and the larger part of Russia with their icy covering. Toward the southeast, Scandinavian

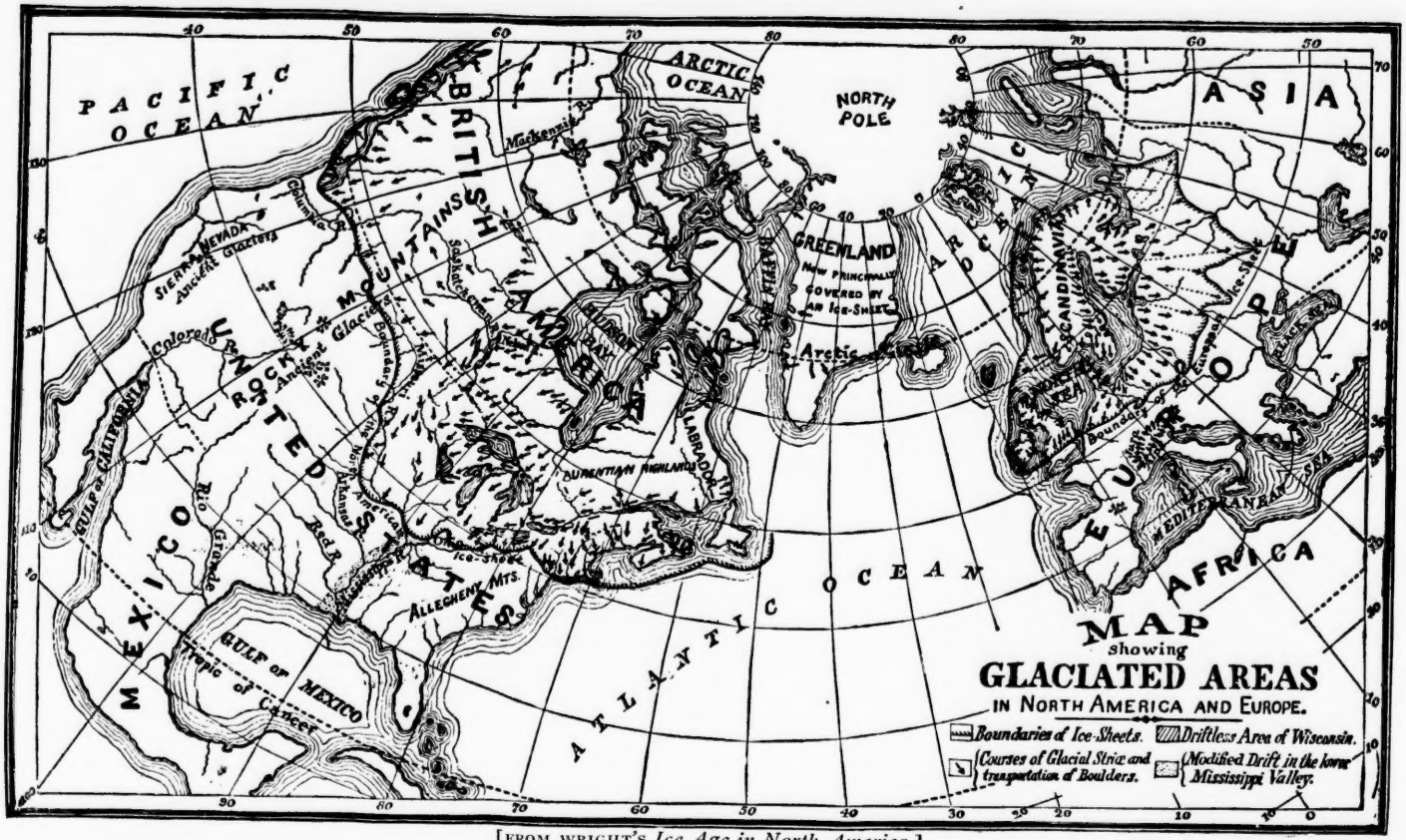
LOOKING ACROSS FRONT OF MUIR GLACIER, ... ON OPPOSITE SHORE, 1½ MILES DISTANT

boulders were carried by the ice as much as 800 miles, to the vicinity of Kief. The total area in Europe covered by ice was about 2,000,000 square miles.

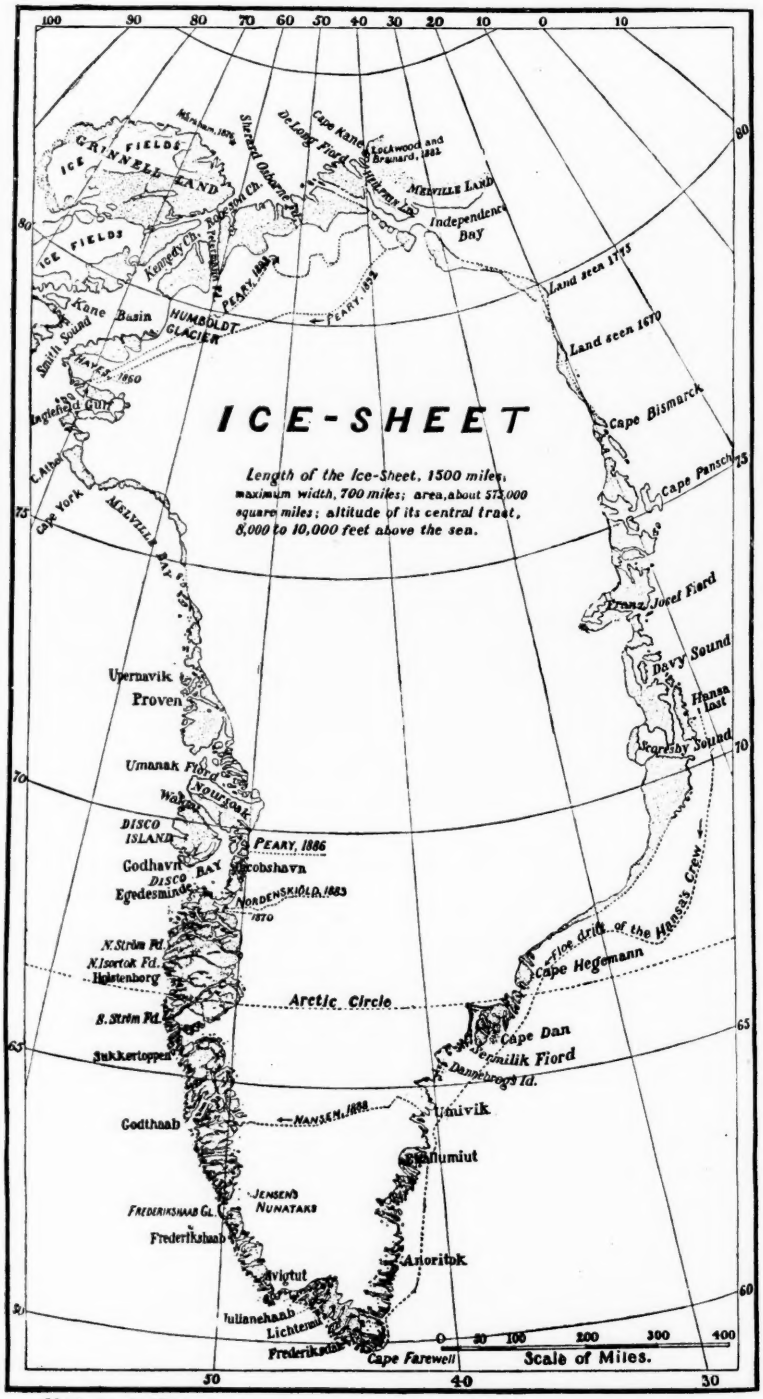
But most remarkable of all are the facts concerning the Glacial Period in North America, where about 4,000,000 square miles are found to have been covered with glacial ice, probably to a depth of more than one mile. The evidences of this movement in America abound on every hand. Glacially transported boulders from Labrador and the Canadian highlands north of the Great Lakes are distributed in great numbers down to the seacoast as far south as New York City and over the country westward down to a line running across Pennsylvania, southeastern Ohio, southern Indiana and Illinois, and northern Missouri as far as Topeka, Kansas, whence the border turns northwesterly nearly parallel to the Missouri River, and bends westward to Puget Sound, on the Pacific coast; thence following the coastline northward. The depth of the ice is ascertained from the discovery of boulders upon the top of Mount Washington (6,000 feet above sea-level), which must have been brought from localities a considerable distance to the north. At the present time Greenland is enveloped in glaciers of continental proportions covering nearly 500,000 square miles with a depth of probably more than one mile; while in Alaska the remnants of glaciers are 100 times larger than those still remaining in the Alps.

It should be borne in mind, however, that the glaciers are formed not by the freezing of standing bodies of water, but by the accumulation of snow. Wherever snow accumulates faster than it annually melts, a glacier will be in process of formation; so that in bringing before our imagination the conditions of the Glacial Period we must picture an excessive accumulation of snow over these glaciated regions, accompanied with a temperature so low that it failed each summer to melt it all away. The conditions, therefore, under which Glacial Man existed, may have been closely similar to those under which he still lives on the coasts of Greenland and in southeastern Alaska, or perhaps even in Switzerland, where vegetation flourishes even up to the very edge of glaciers of immense extent.

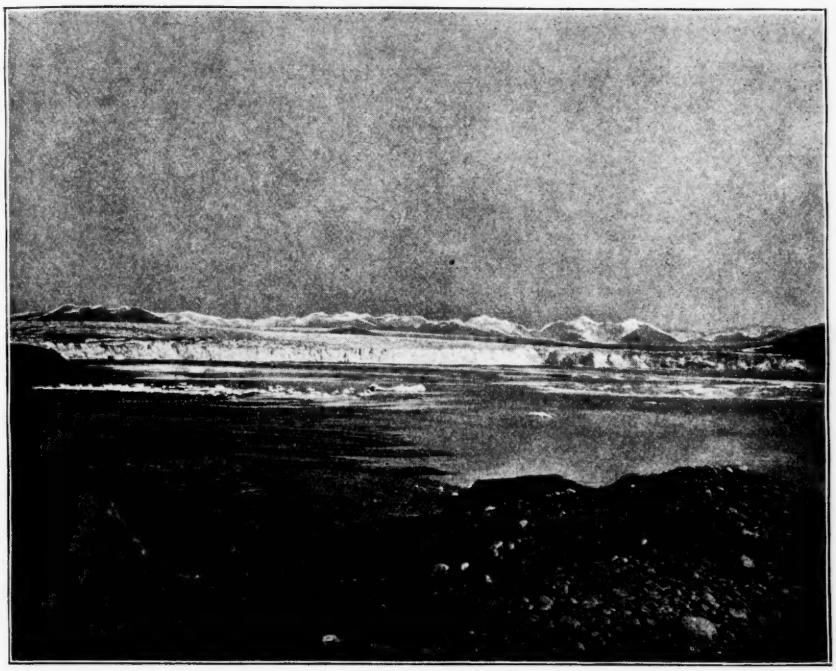
In the strict sense of the word, Glacial Man still exists in Greenland, Alaska, Patagonia, and Switzerland, as well as in many other places where glaciers still linger. But chief interest attaches to the evidence of man's existence in Europe and America during that great extension of ice which is properly referred to as the Glacial Period. As far back as 1847, the scientific world was startled, or rather would have been startled but for its incredulity, with the evidence adduced by Boucher de Perthes, of Abbeville, France, that both there and at Amiens, in the valley of the Somme, he had found rough-stone implements imbedded in undisturbed gravel deposits which were attributed to the Glacial Period. In 1858, Sir Charles Lyell, with Professor Prestwich and several other eminent English and French geologists, visited the localities, and became so thoroughly satisfied of the genuineness of the evidence that there has since been no room for doubt on the part of those who have properly studied the facts; so that Glacial Man has since that time been a pretty generally accepted fact with which anthropologists and archæologists have been compelled to reckon. The presentation of these facts, therefore, and of the accompanying facts relative to the Glacial Period, has become essential to those who would read all of the record of man's past history; and the study of glacial geology has become one of the most fruitful branches of archæological investigation.



[FROM WRIGHT'S *Ice Age in North America.*]



MAP OF GREENLAND SHOWING THE NARROW BORDER OF INHABITABLE LAND OCCUPIED BY THE ESKIMOS AT THE PRESENT TIME. [FROM WRIGHT'S *Greenland Ice-fields and Life in the North Atlantic*]



FRONT OF MUIR GLACIER SHOWING MORAINE DEPOSITED ON THE SIDE OF THE VALLEY

The human relics supposed to be of Glacial Age discovered by Bucher de Perthes and others in northern France consist simply of chipped flint implements; while the evidence of their Glacial Age is not direct, but inferential; for true glaciers seem never to have existed in the valley of the Somme, or indeed in any part of northern France. But the glacial period was pretty certainly characterized by many other things than glacial ice. Semiglacial conditions extended beyond the border of the ice, producing results which can still be fairly well interpreted. Evidently there was an increase of rainfall beyond the border of the glaciated region, producing increased floods in the streams; while the cooler climate caused accumulations of river ice far in excess of anything now known in those regions. The spring freshets and ice-gorges of the time were certainly of enormous proportions. As a result of this, there were deposits of gravel along the borders of the streams far in excess of anything which now occurs. Such deposits are specially prominent at Abbeville and Amiens, where they are utilized, at the present time, by the railroads to secure ballast and for other purposes. In some places these gravel terraces reach an elevation of 90 feet above the river. It is in these gravels, where they have been undisturbed since the original deposition, that the so-called glacial relics referred to have been found.

An additional evidence of their glacial age consists in the character of the animal bones found in connection with them. These include those of the mammoth, rhinoceros, horse, and reindeer, all of which were characteristic in that region. On the whole, this evidence is entirely satisfactory to those who are familiar with the subject.

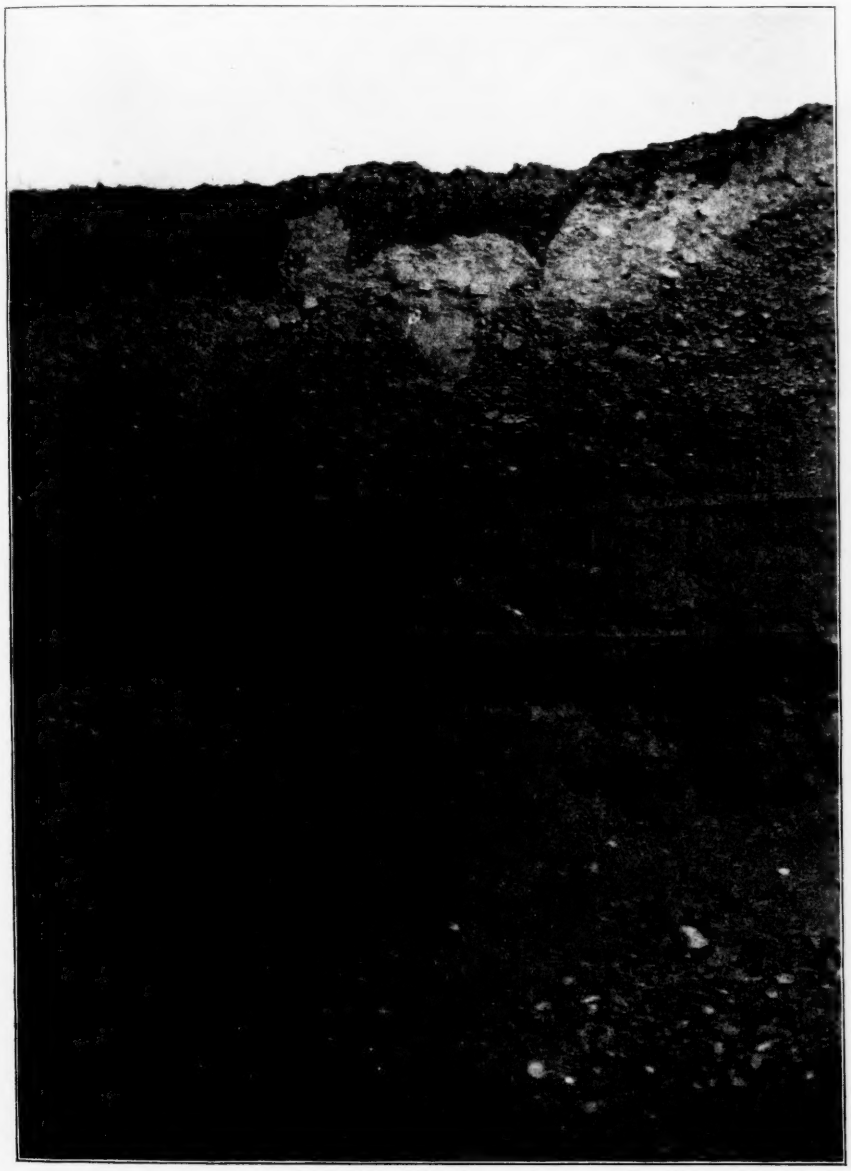
These discoveries of the relics of Glacial Man in northern France stimulated research all over Europe and North America. Abundant evidence was soon brought forward of man's existence in England during a corresponding period and in much the same condition of social advancement. Chipped flint implements were found in the high-level gravel terraces of various streams in southern England lying outside the glaciated region, but the evidence was still more abundant in various caverns which had been occupied as places of habitation. Of these, Kent's Hole, near Torquay, Devonshire, England, was one of the most celebrated.

This cavern had been explored as early as 1826 by the Rev. J. Mac Enery, a Roman Catholic priest, whose residence was near by; but, owing to his early death, and to the incredulity of that generation of scientific men, the story was neither credited nor published until 1859. The deposits in the floor of the cave, one chamber of which was about 60 feet square, consisted of a surface of dark earth a few inches thick, containing Roman pottery and other modern relics, associated with the bones of domestic animals. Below this was a stalagmite floor from 1 to 3 feet thick, formed by the dripping of lime water from the roof. Under this was a compact deposit of red earth from 2 to 13 feet thick,, containing flint and bone implements of various kinds, mingled with charcoal; while flint implements were also found in a breccia still lower than this. The animal remains below the stalagmite floor consisted of bones of the cave lion, cave bear, mammoth, woolly rhinoceros, horse, reindeer, and several others associated with them in the closing stages of the Glacial Period. Similar remains were found in various other caves in southern and central England; but, as in the case of the high-level gravels, the connection of man with the Glacial Period is here inferential, rather than direct. But the evidence was of such a cumulative character that there was but little chance for its misinterpretation.

In America the quest for the evidence of Glacial Man was first successfully made by Dr. C. C. Abbott in the glacial delta terrace at Trenton, New Jersey, where, as early as 1875, he began to find so many roughly chipped stone implements in the talus of the bank undermined by the river that he could not resist the conviction that some of them must have come from the undisturbed gravel strata, which here rise 50 feet above present high-water mark. By constantly watching, for a series of years, the fresh exposures of the bank made by the undercutting of the stream, and others where artificial excavations were made for the sake of obtaining gravel, Dr. Abbott succeeded in finding a considerable number of implements in the undisturbed strata. Nearly all of these became the property of the Peabody Museum, Cambridge, Massachusetts, where they may be seen at any time by visitors. For many years Dr. Abbott's services were retained by Prof. F. W. Putnam, the Curator of the Peabody Museum, who early recognized the value of the discovery. Subsequently Professor Putnam engaged Mr. Ernest Volk to carry on systematic explorations over the whole area about Trenton which were rewarded by even more definite results than had been obtained by Dr. Abbott, the crowning discovery being that of a human tibia beneath such a depth of coarse gravel that its glacial character could not well be doubted by anyone. Mr. Volk's discoveries are, for the most part, in the American Museum of Natural History in New York City.

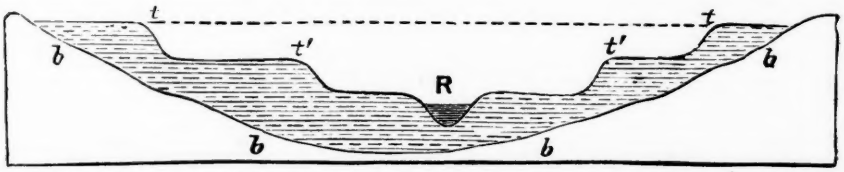
The importance of these discoveries at Trenton lay especially in the directness of their connection with the Glacial Period. The ice, however, of

the Glacial Period never came farther down the Delaware Valley than to the vicinity of the city of Easton, about 40 miles north of Trenton. Still the



GRAVEL PIT IN THE GLACIAL DELTA TERRACE AT TRENTON, N. J., IN WHICH MR. ERNEST VOLK FOUND A HUMAN BONE 21 FEET BELOW THE SURFACE. THE BONE SHOWS AS A WHITE SPOT WHERE LINES DRAWN ACROSS FROM THE RED MARKS INTERSECT

physical conditions are such that it is easy to demonstrate the presence of glacial ice in that latitude when the gravel at Trenton was being deposited. A very distinct terminal moraine belonging to the latest epoch of the Glacial Period occurs at Belvidere, a little above Easton. From this point down to Trenton, the Delaware River occupies a trough from a quarter to half a mile in width, with precipitous sides 200 or 200 feet in height, and has a gradient of 2 or 3 feet per mile. Into this trough or gorge the drainage of the melting ice, with its superabundant supply of northern gravel, poured in such torrents that it built up terraces far above the present flood-plain of the river. On reaching Trenton, the gorge suddenly opens into a broad valley at the head of tide-water. Here a delta 3 or 4 miles wide, and 50 feet above the present river level, was built up, forming the site of the present city. It is as distinct a result of the flooded stream of the Delaware when swollen by the water of the melting ice-sheet above Belvidere as could be asked. The effect and the cause are directly connected. Among the more distinct evidences of ice-action, however, are numerous boulders, 2 or 3 feet in diameter, derived from the upper part of the Delaware Valley, which are too large and too variously distributed in the deposits to have been brought down by anything less than the floating ice set free by the melting floods of the Glacial Period.



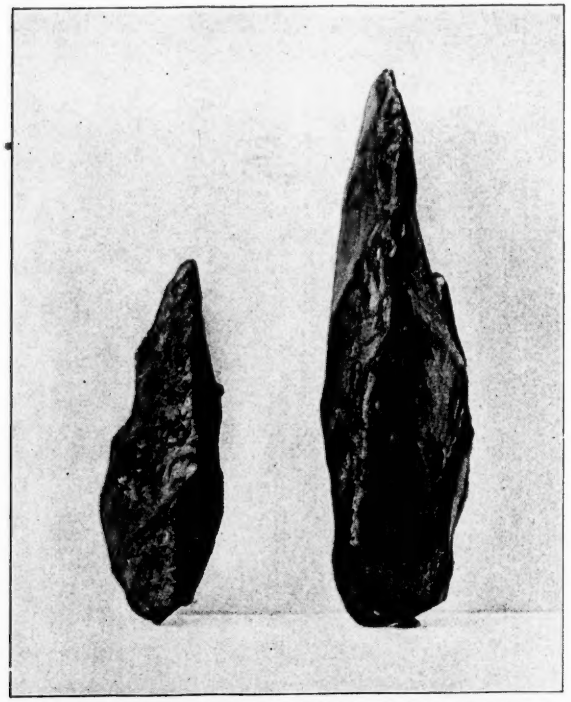
IDEAL SECTION OF A PRE-GLACIAL VALLEY FILLED WITH GLACIAL DEBRIS. *b*, BED-ROCK OF PRE-GLACIAL CHANNEL. R, PRESENT RIVER. *t* AND *t'*, TERRACES DEPOSITED DURING THE GLACIAL PERIOD

Roughly chipped implements have been found in various other places in the United States in conditions similar to those at Trenton. One of the most well-attested and interesting discoveries is that in the Tuscarawas Valley at Newcomerstown, Ohio. This consisted of a symmetrically shaped flint implement, made from local material, which is an exact pattern of some which are found in the glacial gravels already referred to in northern France. The discovery was made in 1889 by Professor W. C. Mills, the present accomplished curator of the Ohio State Archæological and Historical Society of Columbus. It was taken by him from 16 feet below the surface in undisturbed strata of the terrace of glacial gravel which lines the Tuscarawas and Muskingum River as those already described border the Delaware. A glance at the accompanying map will illustrate the situation. The tributaries of the Muskingum River, like all the others flowing south in Ohio, rise in the glaciated region. The melting floods at the close of the Glacial Period gorged all those lines of drainage, and built up gravel terraces which now form one of their chief characteristics. Their connection with the Glacial Period is beyond all dispute.

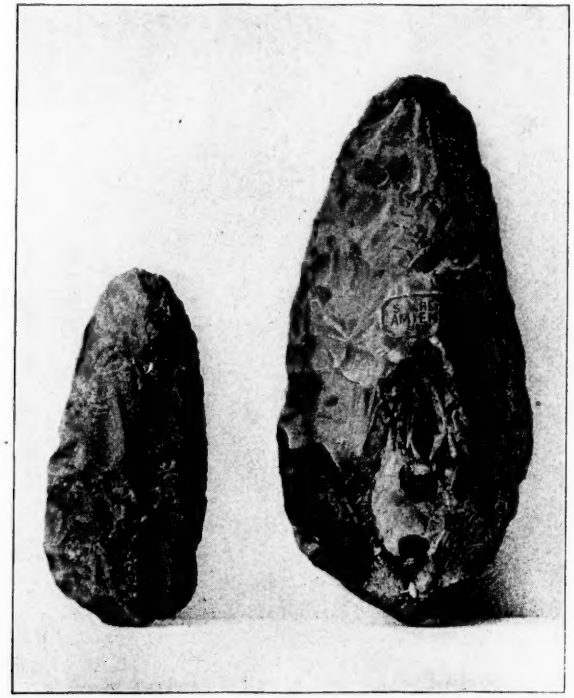
Of the human skeletons presumably of Glacial Age, the most important are those of two individuals found in a cavern at Spy in the province of Namur, Belgium. These were discovered in 1886 by Messrs. Lohest and Fraipont, professors at the University of Liege. The remains consist of

GENERAL VIEW OF THE GLACIAL TERRACE AT NEWCOMERSTOWN, OHIO, SHOWING THE LOCALITY IN WHICH THE PALAEOLITHIC IMPLEMENT WAS FOUND BY PROF. W. C. MILLS, 16 FEET BELOW THE SURFACE. THE TWO MEN ARE STANDING BESIDE THE EXACT PLACE

TERRACE IN NEWCOMERSTOWN SHOWING WHERE PROF. W. C. MILLS FOUND A PALAEOLITHIC IMPLEMENT



THE SMALLER IS THE PALAEOLITH FROM NEWCOMERSTOWN, THE LARGER FROM AMIENS. EDGE VIEW. [FROM WRIGHT'S *Ice Age in North America*, LOANED BY D. APPLETON & CO.]



THE SMALLER IS THE PALAEOLITH FROM NEWCOMERSTOWN, THE LARGER FROM AMIENS. FACE VIEW. [FROM WRIGHT'S *Ice Age in North America*, LOANED BY D. APPLETON & CO.]

2 skulls, together with the jawbones and most of the other parts of the frame. One was apparently of a woman and the other of a middle-aged man. The accompanying photograph, taken by S. Prentiss Baldwin, Esq., shows well the peculiarities of the head. The eyebrows are very prominent, the orbits large, and the forehead low and retreating, but the capacity of the skull is larger than that of some existing races of men. The lower jaw is heavy, with almost no projecting chin; while the teeth are large, and the last molar is as large as the others. The thighbones were curiously curved, and the lower ends so fashioned that they must have walked with a bend at the knee.

The evidence of the connection of these specimens with the Glacial Period is similar to that fixing the date of the implements in Kent's Hole and other caverns in southern England. Below the floor of the cave there were 3 distinct bone-bearing beds, separated by layers of stalagmite. The skeletons were found in the lowest of these beds, associated with abundant remains of the rhinoceros, horse, bison, mastodon, cave hyena, and a few other extinct species, all of which were contemporaneous in Europe with the closing stages of the Glacial Period, and afterwards became extinct in that region.

The most recent additions to the evidence of Glacial Man are the implements found by Professor Armachevsky beneath the loess of southern Russia at Kief, and the skeleton found in a similar deposit in Lansing, Kansas, already described in RECORDS OF THE PAST for September, 1902, and April, 1903.

Much other evidence of similar import exists, but that already adduced is the most decisive, and is sufficient to establish several important points concerning man's antiquity and early condition. His antiquity is certainly that of the close of the Glacial Period. Man was already in the world during that unstable condition of the earth's crust which accompanied the melting off of the great ice-sheet from the glaciated areas of Europe and North America; but how much before that stage he may have been an inhabitant of that region we have not present data to determine. Fixing upon that point, however, we may determine his antiquity by the evidence bearing upon the date of the closing scenes of the Glacial Period. After 25 years of continuous research and vigorous discussion, there has come to be, according to Professor N. H. Winchell, one of the highest authorities [See *American Geologist*, September, 1902], a pretty general consensus that the conditions of the Glacial Period lingered over Canada and the northern part of the United States up to about 8,000 years ago.

The most conspicuous evidence of this late date is furnished by the shortness of the gorges below Niagara Falls and the Falls of St. Anthony, at Minneapolis. These gorges are each a little over 7 miles in length, and represent all the work done at these points by the Niagara and Mississippi Rivers since the Glacial Period. In the case of the Niagara River the erosion of the gorge below the falls represents the work done since that stage of the receding ice-sheet at which it first melted off from the Mohawk and St. Lawrence Valleys, permitting the drainage of the Great Lakes to take its present eastward course. At that time the falls began their recession at Lewiston, which they have continued up to the present. In the case both of the Falls of Niagara and of St. Anthony it is found that the rate of recession is about 5 feet per year. As the distance is 7½ miles, this would give 7,500

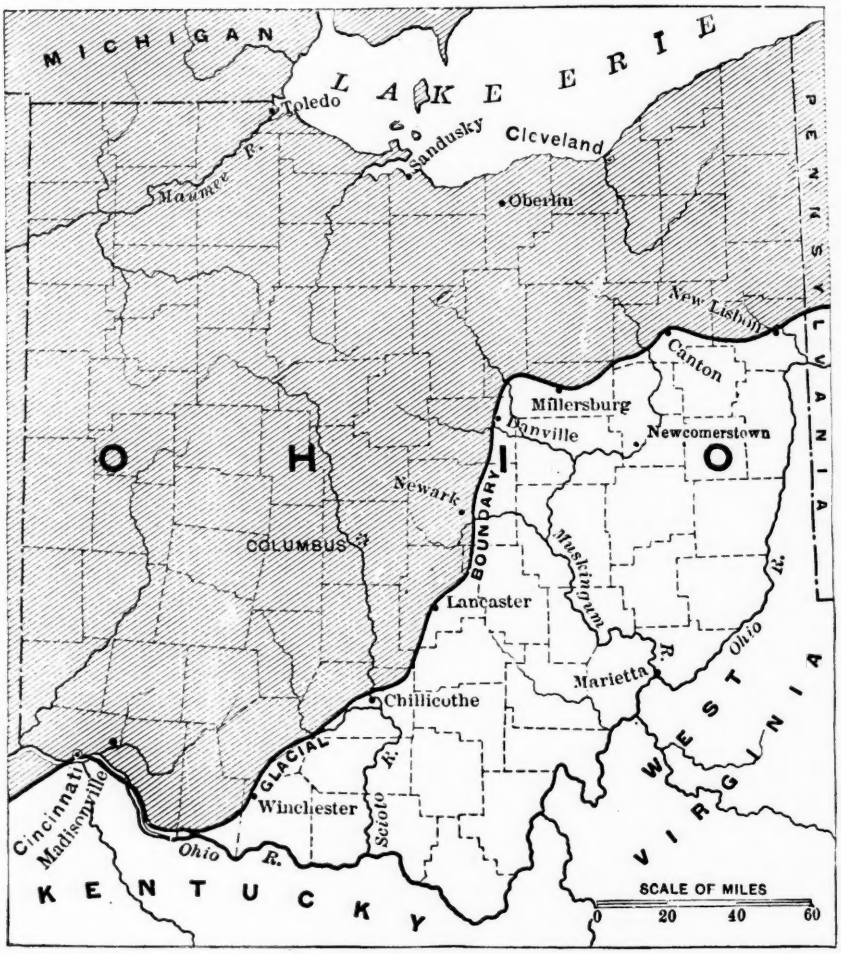


FIG. 70.

MAP OF OHIO SHOWING THE GLACIAL BOUNDARY AND ITS RELATION TO NEWCOMERSTOWN [FROM WRIGHT'S *Ice Age in North America.*]

years as the time required for the entire recession, on the supposition that the present forces have been approximately uniform, and that their action has been continuous. That this calculation is within 2,000 or 3,000 of the exact time, there can now be little doubt.

But this evidence of the recent date of the close of the Glacial Period is supported by a great variety of other considerations which point to a similar conclusion. Briefly stated, they are:

1. That the recession of the falls at Niagara and St. Anthony correspond in extent approximately with that of nearly all other postglacial waterfalls.

2. That all postglacial streams show a correspondingly limited amount of erosion in the enlargement of their troughs.

3. That innumerable glacial lakes and ponds have been but partially filled up with peat and sediment, and but partially drained by their overflow outlets.

4. That the glaciated surfaces of limestone rocks exposed to the action of the elements have been but slightly disintegrated and eroded. In those regions where glacial boulders rest upon such surfaces, and have protected the portions immediately underlying them, the pedestals upon which they stand are at most but 2 or 3 inches above the general level.

So far, then, as the antiquity of man is proved by his connection with the Glacial period, it is not necessarily much, if any, greater than that which is now proved by the antiquity of his civilization in the valley of the Nile and the Euphrates.

Nor is the light shed by the remains of man upon the early condition of the human race much more definite. The conditions and attainments of Glacial Man would not seem to differ very greatly from those of the Eskimo and the inhabitants of Terra del Fuego, who at present frequent the borders of the great glaciers of Greenland, Alaska and Patagonia, all of whom are still practically in the "Stone Age." It is therefore by no means uncertain that the low stage of development of Glacial Man which we have been considering may not have been contemporaneous with the high civilization which already existed in Mesopotamia long before the days of Hammurabi, and, as we are finding out in Egypt, before the time of Menes. The upshot of the whole matter seems to be that, aside from the remarkable physical discoveries and economical inventions of modern times, there is nothing new under the sun. The struggle for preëminence has gone on in the human race from the earliest times on the same broad lines. Variations in the intelligence and morality of tribes and races, combined with the possession of varying amounts of natural advantages, have produced corresponding inequalities of social conditions in all ages of the world.

MAN OF SPY

KASR
PLAN OF THE KASR MOUND SHOWING THE PROGRESS OF THE EXCAVATIONS
UP TO JUNE, 1900

EXCAVATION OF THE RUINS OF BABYLON

PART IV

ON March 25, 1900, Dr. Koldewey reported that in the filling-in in the rooms of the Temple of Nin-Mach, tables were always found of the kind previously described (payrolls of workmen); the number of these, however, appeared to him to be out of all proportion to the mass of dirt which had to be removed and did not warrant the clearing out of all the rooms. In the same filling-in have been found several more of the previously mentioned terra-cottas, and among these the upper part of one and the lower part of another figure. The accompanying drawing shows two of these parts, but it is to be noted that although they belong to the same type they do not belong to the same figure. From this is will be possible to get an approximate idea of the Temple Statue of Nin-Mach, a picture of which has not been found up to the present time, notwithstanding the fact that Dr. Koldewey had removed large masses of dirt both from the front and the rear of the Temple.

The gate of the North Front, like that of the Cella in the yard, is provided with 2 ornamental towers. Before the middle of the door a small altar of clay bricks was found. At the main gate just below the paving, at each side, a sacrificial (opferkepsel) composed of 6 bricks, one of which contained the picture of a dove made from unburned clay, and the other the remains of the bones of a dove.

The large exploring trench near the "Athelé" has also been completed. At a depth of 18 m. below the summit of the "Athelé" it (the trench) has brought to light the junction of the north wall and of the large canal. The entire mass of dirt, however, consisted mainly of parts of broken bricks. At about the center of the pile were found late graves. In one of these there was a small tablet of gold containing the crude (Sassanidian?) picture of a woman.

On April 20, 1900, Dr. Koldewey gives the following report concerning his excavations in the hill Amran-ibn-Ali:

So far the dirt consists of the graves made of clay bricks within the rooms of houses. The objects within are of a later Seleucidian-Parthian origin. The graves contain the customary vessels, lamps, small ornaments, but seldom gold or cut stones. In the last one we opened 12 statues were lying, almost all of them representing naked female figures; 2 were of alabaster, 2 of clay and 8 of bone — the latter were coarse and ugly, the alabaster figures pretty Grecian, and the clay statues quite old. This no doubt represented 2 and perhaps 3 burials. On the top was the layer (?) of burial fire(?).

The following Babylonian objects have so far been found in the dêbris: A seal cylinder, a piece of a large tablet, a fragment of a presentation document (in bad condition). In addition to these, on April 28, we happened upon the stock of a later (Grecian ?) pearl merchant, who had stored away, possibly hidden, in several baskets his working materials, consisting chiefly

of antique decorative objects, ornaments and parts of statues. The immense mass of small objects chiefly consists of smaller pearls made of agate, onyx, lapis lazuli, etc., some finished and others just commenced; among them are also some genuine pearls and amethysts (?), also many pieces of uncut agate, quartz, etc.

Of greater interest, however, is the following:

A large number of round plates made of two-colored agate and onyx, from ½ to 8 cm. in diameter, perhaps from the ornamentation of "polylither" statues; numerous parts of eyes, of which the lids consisted of lapis lazuli, the whites made out of white stone, and the iris from 2 to 3 different materials. All of these are fitted together in ring-shaped form. Pieces of hair, beard, eyebrows made of lapis lazuli, in part of delicate workmanship. The single strands and curls are made up of special pieces fitting together. Decorative parts of a staff of agate and paste fitting in a spiral form. Remains of a very fine Intarsie made of lapis lazuli the meaning of which is not clear. A flat pearl, 4 cm. wide, with a cuneiform inscription of 6 lines. 7 Egyptian scarabs and seals of paste. 30 Babylonian scarabs representing ordinary objects: — star, sun, priests offering up sacrifice. 7 seals with similar representations. 6 very small weights, mostly shaped like ducks. 28 small "Phallische Apotropæen," made of paste. 20 small glass pastes in part of very pretty workmanship. A beautiful small Greek Onyx-Intaglio, representing a standing female figure with a cornucopia and steering oar. 15 seal cylinders, mostly in bad preservation; among these is a large one, 3 cm. thick, and of fine workmanship, with cuneiform inscription, one with aramaic and a third which is very old, but much used. 5 club buttons of stone, among which is a very handsome one of polished jasper, shaped like a melon, and another of diorite with cuneiform inscription of 10 lines.

Also parts of a magnificent throne: (a) parts of a turned foot of syenite (?); (b) the projecting end of the back of a chair of quartz 15 cm. long, 8 cm. broad; (c) an iron rod which was doubtless placed in a bar between the feet of the throne, upon which were arranged a row of beautifully polished onyx ornaments; (d) a cylindric piece of lapis 6 cm. in diameter, doubtless also belonging to the throne; and finally (e) 6 round bars, 4 cm. thick, 20 cm. long, of which 2 are of a beautiful light-blue substance, and 4 of lapis lazuli. Of the last named cylindric lapis lazuli bars 2, each of which bears a relief, and cuneiform inscription, which are of gem-like workmanship. The one, shortened by 12 cm., reveals a standing god with a feather crown, in each hand lightening, and on the raiment 3 shields, as on the Schamach-resch-uzur relief; the left hand is holding the reins of 2 beasts lying in front of him. The workmanship is somewhat stiff, and contains 5 lines of cuneiform writing. The other one also shows a standing god, in a garb similar to the former; the left hand is holding a staff and ring on the breast, the right hand, hanging down, is holding on to the tail of a two-horned Dragon, the front part of which lies to the right side and in front of the god, and contains 8 lines of cuneiform writing. The piece is cracked in a number of places without, however, anything of importance missing. The workmanship is very fine and very beautiful. On the girdle are figures 4 mm. high, and on one of the 3 shields on the raiment horses are represented, which are 5 mm. high.

On July 10, 1900, Dr. Koldewey reported that the excavation in the

northern part of the Hill Amran had resulted in the discovery that the ruins of an important Babylonian edifice are here preserved at a great depth.

To the north we have driven a trench into the hill towards the south, the bottom of which lies at one-half the height of the hill, and in which the railroad runs.

Within the radius of the excavation made, the Hill consists of the following layers:—

1. Right at the top was a thin layer of old Arabian origin, almost without the walls of houses, but with a considerable quantity of burned rubbish; in this were found vessels with Arabic Inscriptions, Cufic coins and Hebrew magic bowls.

2. Under this one was a layer of no great importance, in which appear thin walls of houses made of Babylonian bricks in stucco; here were found Sassasnidian coins.

3. Under this again a layer about 5 m. deep, of houses made of clay bricks together with all the ruins, etc., of same; this layer stands upon (4) a very thick stratum 12 m. deep, through which run ashes, burned objects, and rubbish, together with single walls of houses made of clay bricks. There were found here, as in No. 3, Parthian and Seleucidian coins.

5. Under this again — at a depth of 21 m. below the surface of the Hill — lay the flooring of the Babylonian building which came to light in the deep trench which was made at the southern end.

Of this building there are still standing upright to a height of several meters, clay walls 3 m. thick. The flooring consists of burned bricks covered with asphalt. In the course of time this has raised up in several places, and the tiles of the uppermost flooring bear the seal of Nebuchadrezzar. For this reason I am inclined to think that the foundation of the building was laid before Nebuchadrezzar's time. In the southern wall a gate has been laid bare with an immense foundation for the cornerstone, but which has been lost — also a part of the adjoining room in which a " Postament " made of burned bricks, has been built into the clay wall. Below the clay walls and the lowest flooring is found a compact foundation of clay bricks which is 2 m. thick, and below this old building refuse reaching as far as ground-water. On the uppermost flooring we found the following: a gold earring, something made of a thin plate of gold, a knob made of thin plate of silver, a rose ornament made of stone, several oblong onyx-pearls and pieces of engraved shells with lotus ornaments and wings.

It is plain that the building was already in ruins prior to being filled up with rubbish, but it is not probable that recent collectors of bricks and antiques ever reached this point. This very fact makes it desirable to continue the work of laying bare the building, notwithstanding the big pile of rubbish, which is 23 m. high.

The northern deep trench has not revealed any sure traces of Babylonian buildings. Moreover, Parthian remains reached clear down to the ground-water, at which level lay a wall, made of broken antique bricks, and Parthian-Seleucidian graves.

Here also the rubbish was traversed by clay walls, between which was a thick stratum of graves, side by side and over and under each other.

In this trench were found somewhat below the surface of the railroad the " shock of pears," of which mention has already been made. In addition

decorative ornaments and terra-cottas, etc., were found in the graves, of which also mention has been made, and a pot containing about 60 well-preserved Seleucidian silver coins with the stamps of Demetrios, Antiochus, Epiphanes and Lysimachos. Of Babylonian objects were found: the head of a steer made of stone half its natural size, 2 fragments of so-called boundary stones, etc. The Babylonian bricks, always used in the Parthian graves, are all in exceptionally fine preservation. Most of them bear the stamp of Nebuchadrezzar. Babylonian square stones are also frequently used for thresholds and such as in the Parthian buildings. A large part of one of these has just been laid bare at the northern entrance of the trench. On the walls of the same, is a row of enigmatical sketches, which were made on a stucco trough supported by short stucco columns. The object of the building is not clear as yet.

THE GODS ADAD AND MARDUK

One of the cylindrical lapis lazuli objects found by Dr. Koldewey represents the storm—and weather—, thunder—and lightning god Adad (Hadad). The flashes of lightning held in both hands plainly indicate this, and the accompanying inscription clearly confirms it. The cylinder bears a double inscription, one in 2 lines in Assyrian Cuneiform characters, which reads:

To the god Marduk, the great lord, his master, from Esarhaddon, the King of all, King of Assyria, in order that he may live, presented [etc., to the ending of the first line of this Assyrian inscription is an inscription in 3 lines in new Babylonian characters].

Treasure of the god Marduk*. Seal of the god Adad of the temple Esakkil.

The seal of lapis lazuli in question was accordingly a consecrated gift from the Assyrian King Esarhaddon [681-668 B. C.] to the City god of Babylon, the god Marduk, not, however, designed for him alone, but for his Temple Esakkil, and more especially for the god Adad, who together with the whole line of other gods inhabited a compartment or rather as we would call it, a chapel, in the interior of the large national sacred edifice Esakkil.

The second lapis lazuli cylinder shows the picture of a god, as given in No. 3, the picture of the god Marduk in the full glory of his appearance, with "broad" eye and ear, the symbol of his omniscience and with powerful right arm, the sign of his omnipotence.

The inscription, in 8 lines, engraved to the left of the picture, in new Babylonian cuneiform writing, reads:

To Marduk, the great lord, the powerful one, the most sublime, the high, the maker of all, the lord of lords, the sublime judge who determines the decision of the peoples, the lord of the lands, the lord of Babylon, he who dwells in Esakkil, to his lord, has Marduk-nadin-schum, the King of all, the sublime, his votary, in order that he may live, that his family may prosper that his lease of life may be long and his reign made sure, that he may throw down the land of his enemy and that he may ever walk before him in safety, a seal of glittering lapis lazuli, with magnificent gold carefully worked, an ornament for his spendid neck, caused to be made and presented.

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* Below the word which stands for "Treasure" (sa-ga) and above that standing for "seal (closer over the determinative before Kunukku) is seen a single perpendicular wedge. Did this number 1 serve for the purpose of registration?

FIG. 1.
TERRA COTTA FOUND IN THE TEMPLE OF NIN-MACH

FIG. 2
ADAD

FIG. 3
MARDUK

The King Marduk-nadin-schum, who presented this seal of lapis lazuli to the lord of the god Marduk, in order that he might wear it as an ornament around his neck, is doubtless the Babylonian king whose part the Assyrian King Shalmaneser II. [858-824 B. C.] took, when his younger brother Marduk-bel-usâte attempted to deprive him of his throne and land. In his 8 year, *i. e.*, 851, Shalmaneser came to the aid of Marduk-nadin-schum. Marduk-bel-usâte escaped with his followers to the mountains, but was killed in the year 850 by Shalmaneser.

A NEW KANEPHORE FROM THE III MILLENNIUM B. C.

As Thucydides and Ælian relate, the tyrant Hipparchus was murdered in the year 514 B. C. by the 2 Athenian youths, Harmodius and Aristogiton at the feast of the Panathenäen, because he had deprived the sister of Harmodius, who had been lawfully chosen for the honorable office of Kanephóros, or "basket carrier," at the Panathenäen Feast, of this office, and by so doing had mortally insulted her brother. The story shows what great distinction was given to the office of a Kanephore serving the public cult. In fact only the daughters of the first Athenian families were honored with this exceptional distinction. On the occasion of the most important Athenian celebrations, specially at those of the Panathenäen, the 2 Kanephores led the procession, holding baskets on their heads, in which lay the wreaths of flowers of those offerings of sacrifice, as also other objects pertaining to the sacrifice, and also hidden among these the knife which was to be used for the slaughtering of the victim. But not alone at the feast of the Panathenäen did such noble maidens figure as basket-carrying priestesses, but we also find them in religious processions in honor of Zeus and Dionysos, of Demeter and Artemis, and other gods. At private sacrifices the daughter of the house acted as Kanephore. With the Panathenäen the baskets were of gold, otherwise of reeds. By Ptolemäus II. Philadelphus this rite was also introduced into Egypt.

The graceful posture of such an aristocratic maiden, holding upon her head a basket with both hands, and in addition the prominent position assigned to the Kanephores at public worship, combined to make her a pleasing subject of representation for the plastic arts. Both of Polyklet, as also from Skopas, Kanephores are known, and specially were the bronze Kanephores of Polyklet, which represented girls of moderate size, who with upheld hands carried upon their heads baskets filled with sanctified objects renowned as works of art of the greatest beauty.

What we have just stated must suffice to recall to mind what we know from classical antiquity regarding the Kanephores. Even to the Greeks the origin of this ritualistic custom was not known; but that it dates back to very early times is clearly shown by the fact that it was already instituted by the founder of the Panathenäen Feast, the hero, Erechtheus or Erechthonius.

In view of these statements it is doubtless of interest to know that in the Babylonian ritual the Kanephores also took a prominent part from early times.

The oldest Babylonian representations of Kanephores are bronze statues which were found by the French in Tellô, the ancient Lagash, the seat of the

FIG. 4

FIG. 5

KANEPHORES.

Priest-Prince Gudea, and of which 2 are depicted in De Sarzec's *Decouverts en Chaldee* [pl. 28, fig. 1 and 2]. They are female figures. In the first of these the lower limbs are not modeled out, but form a cone, with an inscription of Dungi, the King of Ur. The other one is perfectly modeled, bears a short dress reaching to the knees, but has no inscription.

Of a later origin are those Kanephores which date from the Elamitic invasion in the second half of the III Millenium B. C., from the time of the Elamite Kudurmabuk and of his son Rim-Sin, who was appointed by him to be King of Larsam, of that Rim-Sin (alias Ri-Aku, or Ar-joch) [Gen. chap. 14], who was at the same time king over Sumer and Akkad, *i. e.*, the whole of Babylon, until Hammurabi, the King of Babylon, put him to death in his 31 year and thus released Babylon from the foreign Elamitic yoke [*circa* 2250 B. C.]

One of these "Elamitic" Kanephores was found in Afadsch on the Tigris, and is now in the Louvre. It is a female figure, and the inscription, which is placed on the lower half of the body around the raiment, states that the statue was established by Kudurmabuk together with his son Rîm-Sin, King of Larsam, Nana, the mistress of the Mountains, the daughter of the Moon-god, the inhabitant of the Temple Me-ur-ur. The statue has been repeatedly reproduced, also by Perrot and Chipiez [*Histoire de l'art dans l'antiquike*, II., 329]; the inscription was edited by Lenormant and the easier passages of same were translated several times.

An exact duplicate of the Paris Kanephore has been in the possession of the Berlin Museum since 1898 [VA 2922, female figure, 24 cm. high, from elbow to elbow 10 cm. broad]. The inscription, divided in 2 columns of 15 and 13 lines each, is not in as good preservation as appears to be that in the one in Paris, nevertheless it makes possible the verification of the Lenormant edition in more than one place, in fact it is only possible to secure a complete translation of the text from the two.

A third Kanephore, which is supposed to have been found in Tellô, was secured about 1890 by the British Museum. It is a male figure (in Babylon, therefore, male basket carriers also served at the public worship) in exactly the same position of the body as the female basket carriers, and according to the inscription on same was consecrated by Rim-Sin, King of Larsam, to Nana the City goddes of Challab, for his own and his father's life. Hammurabi also was a votary of this "heaven and earth with her splendor filling" goddess. A complete explanation of the inscription of this London Bronze has not yet been made.

An exceptionally fine sample of such a female basket carrier has quite recently (in October, 1900) come into the possession of the DEUTSCHE ORIENT-GESELLSCHAFT through the gift of one of its members, Mr. James Simon, and is now kept in the Royal Museum of Berlin. The entire figure [see figures 4 and 5] is 26 cm. high, from elbow to elbow 10 cm. broad, its 15 + 13 line inscription, which is quite different from those yet known (with the exception of the name and titles of Kudurmabuk and Rim-Sin), is in the finest preservation from beginning to end, in so much as there can hardly be a doubt regarding a single character. The inscription, as on the other Kanephores from Elamitic times, is written in the ancient sacred tongue of Babylon, is in the Sumerian language, and from lines 1-20 reads as follows:

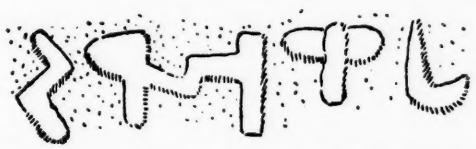
To the Goddess Nana, the Ruler, who is adorned with prodigal splendor, overflowing with grace, to the bright offshoot of the great God of Heaven, to their Ruler, have Kudurmabuk, the Father of Emutbal, Son of Simtischilchak, and Rim-Sin, his Son, the sublime prince of Nippur, the curator of Ur, King of Larsam, King of Sumer and Akkad, built E-scha-chulla, *i. e.*, House of Great Joy, her favorite dwelling, in order that they might have life, and erected its summit high up like, a mountain.

Then follows a short prayer to the same goddess.

For what purpose these Kanephores served we know perfectly well. In all the inscriptions the prominent dedication, " for the purpose of preservation of life," of the giver, points to the conclusion that exceptionally favorable influence upon the gracious well-wishing of the god was hoped for. The basket carrier was to be a symbolic sign and pledge to the god that her royal dedicator was a true votary, and as such ready at all times to make sacrificial offerings. These and similar bronze statues were, as De Sarzec relates, hidden within the platforms of the buildings of Tellô, in cavities 80 cm. long, broad and high, and which were walled up with bricks and asphalt. They were Talismans, by means of which a magic power for the protection of the temple, as also of the builder, were looked for.

On September 12 Dr. Koldewey reported that the excavation in the Palace of the Kasr had proceeded far enough so that a good idea of its state of preservation and plan could be formed. The walls of the various buildings stand upon a massive platform made of fragments and bricks. Inclosed within this platform and built over it there is a mighty fortress wall running from east to west, 17 m. thick and with a simple gateway. The bricks all bear the Nebuchadrezzar stamp. Only a few simple finds of minor importance were brought to light.

On September 28 he reported the finding of a building at the corner of the fortress wall which is older than the wall itself. This building consists of burnt brick and asphalt, the bricks bearing a small stamp on which there



ARAMAIC INSCRIPTION ON BRICKS DATING BACK TO 650 B. C.

is a walking lion and an Aramaic inscription, the significance of which and determining of its age will be of great importance. From the formation of the characters Professor Euting is inclined to think that it dates back to 650 B. C.

THE PAVING STONES OF AIBURSCHABU IN BABYLON

On the east front of the Kasr in Babylon there are 2 kinds of street paving stones: a layer of white limestone and a smaller one of red and white breccia. The plates are worked so that they fit sharply together at the top, whilst the joints broaden out toward the bottom. Asphalt was poured over these from the top. One of the narrow sides of each stone bore an inscription of Nebuchadrezzar.

None of the pieces were found in their original position. The only part of the street paving still lying in place is the lower paving which is of burned bricks. The asphalt, however, which covers these bricks plainly shows the traces of the stone paving which formerly lay here. The road, which formerly led precipitously from north to south, was later, as is shown by its construction and stamps, even in Nebuchadrezzar's time, altered in its level, so that its ascent became less, and then later was again changed so that it ran almost horizontally. In doing this the original paving was taken up and used again later. As a result of this there are now found fragments of the stones on the lowest, on the middle and on the upper street-levels. The original places where the stone paving belonged is shown by the figure 1, upon the lowest brick-layer.

I. The limestone blocks are of the formidable size of about 1.05 m. in the square by 33 to 35 cm. thick. Of these there have now been found at the most southerly end of the Kasr road [W. 26 the plan of the Kasr] 5 complete plates with inscriptions and several fragments bearing writing, and many without inscriptions, part here and part upon the stretch of road which was formerly dug up.

The translation of the limestone inscription reads:

Nebuchadrezzar, King of Babylon, Son of Nabopolassar, King of Babylon, am I.

The Babel street have I paved for the procession of the great Lord Marduk with mountain-stone plates.

II. The second kind of red-white veined volcanic breccia, which has now become rotten and fragile, consisted of blocks about 20 cm. thick, whilst the square surface appears to have originally been 66 cm. A complete sample of this kind has not been found; there are on hand, however, several blocks about 60 cm. in the square, which appear to have lost their inscriptions by being chiselled down again later. These together with a number of inscribed fragments, and especially a great number of cracked fragments without inscriptions, lay on the stretch of road which was previously dug up; a few were found in the neighborhood to the west.

The inscriptions on the 2 different kinds of stone, therefore, only differ in so far that on the limestones the paving material is designated as "libitti aban sadi," and on the breccia stones "libitti abni durminabanda." Beyond this the inscriptions are vertical. The inscription legend seems to be in the main an extract from Nebuchadrezzar's "large stone-plate inscription."

With certainty it may, therefore, be stated that Nebuchadrezzar paved the street of the Kasr with the paving stones here mentioned, and that this street must consequently have been the one designated as "Processional street of Marduk" on the stones. As this street is called Aibur-schabu in the "large stone-plate inscription" and together with Euphrates, Libil-chegalla and Imgur-Bel is designated as the Palace boundary by Nebuchadrezzar himself [K. B. III 2, w. 25. Col. VII, 42-46], the doubt could be put aside that the street dug up on the Kasr is Aiburschabn, and the plan for the topography of Babylon made by me when the Kasr-Plan was published is therefore confirmed.

Even before Nebuchadrezzar's time the beautiful Turminabanda material had been used for paving purposes. Nabopolassar used it in the Processional Street [K, B. III 2 p. 21. Col. V, 12-20], and a block found in

Amran on July 28, 1900, with the inscription: "Sanherib, king of Assyria," gives proof that it was used in still earlier times. Whether or not the fragments r, s, t, found to the west of the street, and on which the name of Nebuchadrezzar does not appear, have any connection with the material used by Nabopolassar for the stretch of the Processional street with which Aibur-Schabu connected it, or whether we are here dealing with material brought there later, will, we hope, yet be shown by the excavation. The entire north-east corner of the Kasr has been ransacked a great deal and repeatedly by recent bricks robbers.

THE PROCESSIONAL STREET OF MARDUK

Described by Dr. Friedrich Delitzsch

The fact of having again discovered the Processional street of Marduk, as is positively proved by the discoveries of Dr. Koldewey, is of the greatest importance for making clear the topography of old Babylon. As therefore, according to Nebuchadrezzar's statements, the stretch of road Aibur-schabu, which he rebuilt for processional purposes, ran on this side, *i. e.*, to the west of the great wall of Babylon, Imgur-Bel, in fact in closest proximity, as is shown by the statements made in connection with the street "from the gate X to the gate Y" there can consequently be no more doubt that the wall of 7.25 m. thickness which was crossed right at the beginning of the excavation of Dr. Koldewey, is other than Imgur-Bel.

I myself had expected to find the same more to the east; this, however, is no longer possible after the discoveries made. According to the reading of the Nebuchadrezzar texts, the idea is not tenable, at all events in my estimation that Imgur-Bel and Nimitti-Bel "the great walls of Babylon," only inclosed the Palace City or Fortress of Nebuchadrezzar. As it is repeatedly stated of the wall Imgur-Bel that it was destined to protect Babylon as "the city of Marduk;" that further the newly built second wall designed to strengthen Imgur-Bel, was to make Esagila unapproachable and impregnable, it is therefore clear that Imgur-Bel must, at least, have surrounded Esagila. I look forward anxiously to further results of the, by Dr. Koldewey, so-called outer wall or outer shell running toward the south.

The refinding of the Processional street now leads me to hope that the great Marduk temple Esagila will also be found. For the outlet of the street was formed by the so-called "Chamber of Destiny," the splendid chamber (dû-azaga) in which at the consecrating each year, on the 8 and 11 days, the son of the god Nebo, enthroned in Borsippa, takes up his dwelling and decides the destinies of the world and especially of the king, whilst the gods of the heavens and of the earth, altogether reverently bow, and stand before him. His "Magnificent Chamber," however, the walls of which Nebuchadrezzar had covered over with pure gold, formed a constituent part of the great temple of the god Marduk, Esagila. From the Chamber of Destiny as far as the Babel street Aibur-schabu opposite the "gate of splendor" Nabopolassar had the processional street of Marduk beautifully paved with breccia plates, and his son Nebuchadrezzar had them carried up the street still further on by filling up and paving, partly with limestone and possibly with breccia plates, Aibur-Schabu from the gate of splendor as far as the gate Istar-sakipat-tebisa (*i. e.*, "Istar overthrows her enemies").

On this stretch of road in all probability was also located the broad bridge over which Nebuchadrezzar carried the Processional Street across the Canal Libil-chegalla.

Naturally these and other assumptions of mine either stand or fall with the conclusions based by me on the texts of Nebuchadrezzar, that Esagila could not be looked for anywhere else than underneath the Hill Amran-ibn-Ali to the south of the Kasr.

After these remarks had been written and published there arrived the welcome news from Dr. Koldewey, that the old Babylonian Building far in the center of Amran-ibn-Ali, which they had reached during the excavation in May, 1900 [See *Mittheilung* No. 5 S. 6 f.] could, according to the plan and inscriptions found there, be no other than the Temple Esagila.

THE LION FRIEZE OF THE PROCESSIONAL STREET OF THE GOD MARDUK.

Described by Dr. Friedrich Delitzsch

The Babylonians were the originators of the art of brick-enameling. They were also the discoverers of another sister-art, by which they reproduced colored pictures in bas-relief on clay and bricks. By means of these brick reliefs, which when joined together served as mural ornaments, they replaced in a neat and tasteful way stones which were entirely lacking in their land, especially alabaster, which latter stone was much used in Assyria for wall sculptures.

The French Expedition of the years 1851-1854, sent out under the direction of "Fulgence Fresnel" and "Jules Oppert," already had collected on the Ruin Pile Kasr, especially on the east side of same, a large number of colored and vari-colored fragments of relief bricks. The coating of color, which was always placed upon the narrow side of the bricks, was at times 1-2 mm. thick.

Among the remains of these pictures the French Explorers thought to have discovered in addition to numerous representations of parts of lions, especially of the manes and tails of lions, also the picture of the hoof of a horse, parts of walls and mountains, of water and trees [See *Oppert*, I, 1863, p. 143 ff.]. Certainly this interesting collection was lost through a sad mishap in the year 1855 in the waters of the Tigris — nevertheless it was confirmed by Diodor's [II 8] relation of a Palace wall in Babylon, on which "were depicted all manner of shapes of animals on rough bricks, with coloring very like that of nature." Furthermore, he said — "one saw on the towers and walls representations of all kinds of animals, and as far as coloring and shape went, well done. The whole represented a hunt, where everything was full of animals of all kinds, and in size more than 4 yards. In this was also represented Semiramis, on horseback, in the act of throwing the spear after a panther, and a short distance off her husband, Ninus, stabbing a lion with a lance." There can also be no doubt that, when Nebuchadrezzar himself mentions artistic pictures of wild oxen and immense snakes, which he placed on glittering, blue enamelled bricks as ornaments for the gates, we also are reminded of such colored brick-reliefs. The same inference could be drawn from the words of the Prophet Ezekiel [Chap. 23, 14 f.].

But of course it has been impossible up to the present time to learn anything more definite regarding this art even in Babylon, which will intro-

duce into the history of art an entirely new chapter. In order to do this we had to refer to the scholars of the Babylonian artists, the Persian Achæmeniden-Kings. It was in Susa where the full beauty of this singular art, discovered by the Babylonians, was first seen again in all its beauty; on the 3 encircling walls, built of bricks, of the large Audience Hall of the Persian Kings, called Apadâna, which was excavated by the French explorer Dieulafoy, there ran inside a broad, figure frieze made up of glazed bricks, representing 9 walking lions and encircled by palms, opened marguerites and other delicate subjects, whilst upon the outer surface there stretched a colored frieze of the most choice majolica-work, which represented the Susian division of the guard of Darius, *i. e.*, of celebrated "Ten Thousand Immortal Ones." It was only in the Louvre, where these discoveries of Dieulafoy, more or less reconstructed, have been placed since the middle of 1891, that we could up to a short time ago enjoy the wonderful fascination of these beautifully glazed colored brick-reliefs, the warm colors of which even centuries have not been able to efface.

Whether or not, and to what degree, the Persian art excelled the Babylonian, her master, has remained unknown. It is only the "Lion of Babylon," regained by the perseverance of Koldewey and Andræ, and which has this advantage that it has been reconstructed from head to tail completely and only of genuine pieces. That the artists of Nebuchadrezzar had attained the highest mastery in the art of depicting the lion cannot be doubted.

Even if the Susian lion frieze, which, like the Babylonian one, rises from a turquoise-blue background, be criticized that the head and forepart of the body of the lion are too small, the lion of Nebuchadrezzar is in this respect practically free from this fault.

The current conception as regards the technical construction of these colored brick-reliefs is the following: that a plate of soft clay and of fair size was used, and on this surface the entire painting was modeled in relief in the same manner as was done on the large alabaster plates. Thereupon the plate was cut up rectangularly, in size as large as the side surface of the common bricks, provided each of these separate pieces with marks of identification in order to simplify the setting together later on, then covered each piece separately with color varnish, and finally burned them in an oven, and necessarily very hard as the enamel on the same is almost like glass.

At the same time it would appear that, judging from the remarkable uniformity of the separate pictures, moulds were used in the construction of these relief pictures, either for the whole or for the separate parts. [Compare: Koldewey in *Mittcilung* No. 3 S. 5:] "It appears as if the ever recurring figures of animals were pressed out of moulds."

Furthermore, it is well to notice that the architect Felix Thomas, who accompanied the Expedition of Fresnel and Oppert, noticed a special sign on some of the fragments of brick, which he felt convinced was a *marque de pose,* or mark of position.

EDITORIAL NOTES.

AFRICA:—EGYPT: Among some of the valuable discoveries made by Dr. Petrie recently at Abydos is an exquisite portrait of Cheops, the builder of the great pyramid. It gives what we may suppose to be an excellent portrait of the famous ruler and builder. It shows an intellectual and resolute face. It is carved out of ivory, and is of exquisite workmanship. Another object of interest was found in the tomb of Menes. This is a large globular vase of green glaze with the king's name inlaid in purple. This discovery carries back nearly 5,000 B. C. polychrome glazing. This recent discovery shows an exceedingly high state of art and in some respects corresponds with that in Crete of the late Neolithic age. There is also a fine camel's head modeled in pottery, which is the earliest representation of the camel in Egypt thus far discovered. Dr. Petrie's discoveries in this great center of early European civilization are of great importance.

EUROPE:—FRANCE: The archæologist M. Charles Magne has made excavations in the Rue Cassini, Paris, where he had long suspected there lay remains of the old Roman occupation. He discovered the cover of a tomb on which is sculptured in bas-relief a Roman blacksmith wearing an apron. In his left hand he brandishes a long pair of pincers and forceps. The right hand is broken off. It probably held a hammer. M. Magne judges from the style of the work and from a piece of money of the time of Nero, found near the tomb, that the work dates from the I Century.

NORTH AMERICA:—UNITED STATES: Prof. William C. Mills, Curator of the Museum of the Ohio Archæological and Historical Society, in a recent letter written while in the field says: The Gartner village site, of which you speak, and which surrounds the Gartner mound we examined last year, is one of the most interesting that we have been able to examine in the Scioto Valley. It is rich in so many remains touching upon the every-day life of the mound builders. This village site is directly outside of the Cedar Bank works and is described by Squier and Davis. Within this inclosure no evidence of a village has ever been found, and during this year I have spent a great deal of time in searching every portion of the enclosure for the remains of a village, but without success; this village, however, is directly outside of it, and perhaps only ¼ mile distant. Here we found the great refuse pits, the same that were found at the Baum village site in Paint Creek Valley. In the bottom of many of these pits were found quantities of corn, beans, various kinds of nuts and pottery ware, showing that these pits were evidently used as storehouses for the provisions, grain, etc., and that by accident they caught fire, leaving nothing but the charred remains of the various articles mentioned. The pits were invariably filled with refuse. Outside of these pits were found the most interesting of all, the great mussel bakes. These were made by digging a hole in the ground from 5 to 7 feet in depth and about 4 to 4 ft. 2 in. in diameter. A great fire was built in the bottom of these pits; so great was the fire that the sides of the pits were burned to a deep red, then small river boulders were thrown upon this fire

and then the fresh water mussels of small size were piled upon the stones and no doubt the entire pit filled with mussels and the top covered with grass and left to bake. After the feast, for it was no doubt a feast, the shells were thrown back into the pit. We made a careful estimate of the number of shells by counting a certain number in a given space, and found that more than 10,000 mussels were used in this great feast. They were all of small size, none of them large, and were procured from the Scioto River only a hundred yards distant. We found 2 of these pits, one was 7 ft. deep and the other one 5 ft. deep; one contained 500 boulders and the other 450. In another pit we found evidences of a great feast of animals. The pit was filled for several feet with the remains of broken pieces of bone, showing that they had used deer, bear, elk, beaver, wild turkey, etc., in this great feast. Another interesting feature of this village was the finding of a great fireplace over 30 feet in length and between 16 and 17 feet wide. The fire had charred the ground to a depth of 14 inches and was hollowed out in the center, caused by removing the ashes. Near one side of this great fireplace was found a cremated skeleton about half burned. When we examined the mound we found a large platform, 40 ft. in length by 20 ft. in width, covered with ashes to a depth of from 6 in. to 2 ft., and there is no doubt that the ashes from this great fireplace were taken and deposited there from time to time. We have finished the examination of this village and procured a great quantity of material showing their handiwork in stone, bone, shell, and pottery. We are now working upon the large Harness mound. This has been worked over by Squier and Davis and is described in *Ancient Monuments of the Mississippi Valley* on page 158 and maps on page 56. This mound was afterward examined by Professor Putnam, an account of which is found in Vol. 3, Nos. 5 and 6, of the Peabody Museum, and described in the 18th and 19th annual reports. Then Professor Moorehead tunneled the remainder of the mound and describes his work on Page 219, Vol. 5, of the official publication of the Ohio Archæological and Historical Society. Not quite satisfied with the examinations conducted in the past, I concluded to further explore this mound. We have about ⅓ of it completely removed, and in this ⅓ I have taken out 70 skeletons. Buried with the skeletons were many pieces of copper made into ornaments and implements and various artifices of stone, bone, shell, and mica, and I was astonished to find some most beautifully carved bone. Of the 70 skeletons removed, 69 of them had been cremated, but the calcined bones of these were carefully placed in a small heap and covered with cloth and skins and various other material such as grass and bark.

Professor Mills will send us later an article on these discoveries, accompanied by a complete series of photographs and drawings.

One of the largest, if not the largest, collections of fossils in the world has been purchased from the Baron de Beyet of Brussels, Belgium, for $250,000.00, and will shortly be deposited in the Carnegie Museum at Pittsburg, Pennsylvania. The securing of this remarkable collection is owing to the good judgment and enterprise of Dr. William J. Holland, the Director of the Museum, and the liberality of Mr. Carnegie.

Dr. Holland had as a bidding competitor Professor Norton of the British Museum. The collection represents the work of Baron Beyet for

over half a century, and his place in the scientific world is a guarantee that the collection is extremely valuable.

In RECORDS OF THE PAST for September reference to an interesting piece of pottery from the Montezuma Valley, Southwestern Colorado, bearing a representation of some animal belonging to the elephant family, was made in an article by Mr. Wright. We have since had the good fortune to receive a drawing of this pitcher which was made by Captain Cecil A. Deane, of Denver. Several attempts have been made to photograph it, but on account of the faint outline of the animal they have not been satisfactory. We therefore reproduce the drawing. The following is the description of the vase as furnished us by Mrs. B. W. Ritter, of Durango, Colorado, who is in possession of the pitcher:—

The piece is pitcher-shape, of about one pint capacity, 4½ inches high, of the ordinary gray ware of the prehistoric people who inhabited the southwest. The decorations are in black: the clay had been worked rather better than much of the same ware; but it is in no way unusual, except for this design. It was probably intended for water or lamp; the latter purpose seems more reasonable as the mouth is small, does not make a good drinking vessel, nor would its size recommend it for that purpose.

It was found about 18 years ago, in the Montezuma Valley, and has changed hands but twice in that time. There is no doubt as to it being a genuine piece. The ruin from which it was taken was a "rich field," but, so far as I know, nothing else unusual was found there. Most of the other pieces have been added to other collections or sold to dealers. None had, so far as I could learn, had any design other than the so-called line and basket patterns.